

Missouri
Department of
Natural Resources

Use Attainability Analysis

for

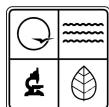
WBID 0600 West Yellow Creek

Submitted by
Pickett Ray and Silver

to

Missouri Department of Natural Resources
Water Protection Program

Date received: October 31, 2007



**Missouri
Department of Natural Resources**
Data Sheets for Recreational Use Stream Surveys

Data Sheet A – Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad): W. Fk. Yellow Creek

Missouri Water Body Identification (WBID) Number: 0600

8-digit HUC: 20090415 County: Sullivan

Upstream Legal Description (from Table H): 14, 63N, 19W

Downstream Legal Description (from Table H): 14, 61N, 19W

Number of sites evaluated: 8

List all sites numbers, listed consequently upstream to downstream:

0600_01 Hwy N Bridge, 0600_02 Hwy 6 Bridge, 0600_03 Owen Rd, 0600_04 150m downstream of site 03, 0600_05 Pelican Rd, 0600_06 Hwy C Bridge, 0600_07 Shelby Rd, 0600_08 Tower Rd

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled.

Mark any other items that may be of interest.

II. Facility Information (list all permitted discharges to the water body segment)

Facility Name(s) and Permit Number(s): PSF Valley View Finishing – MO 0118478

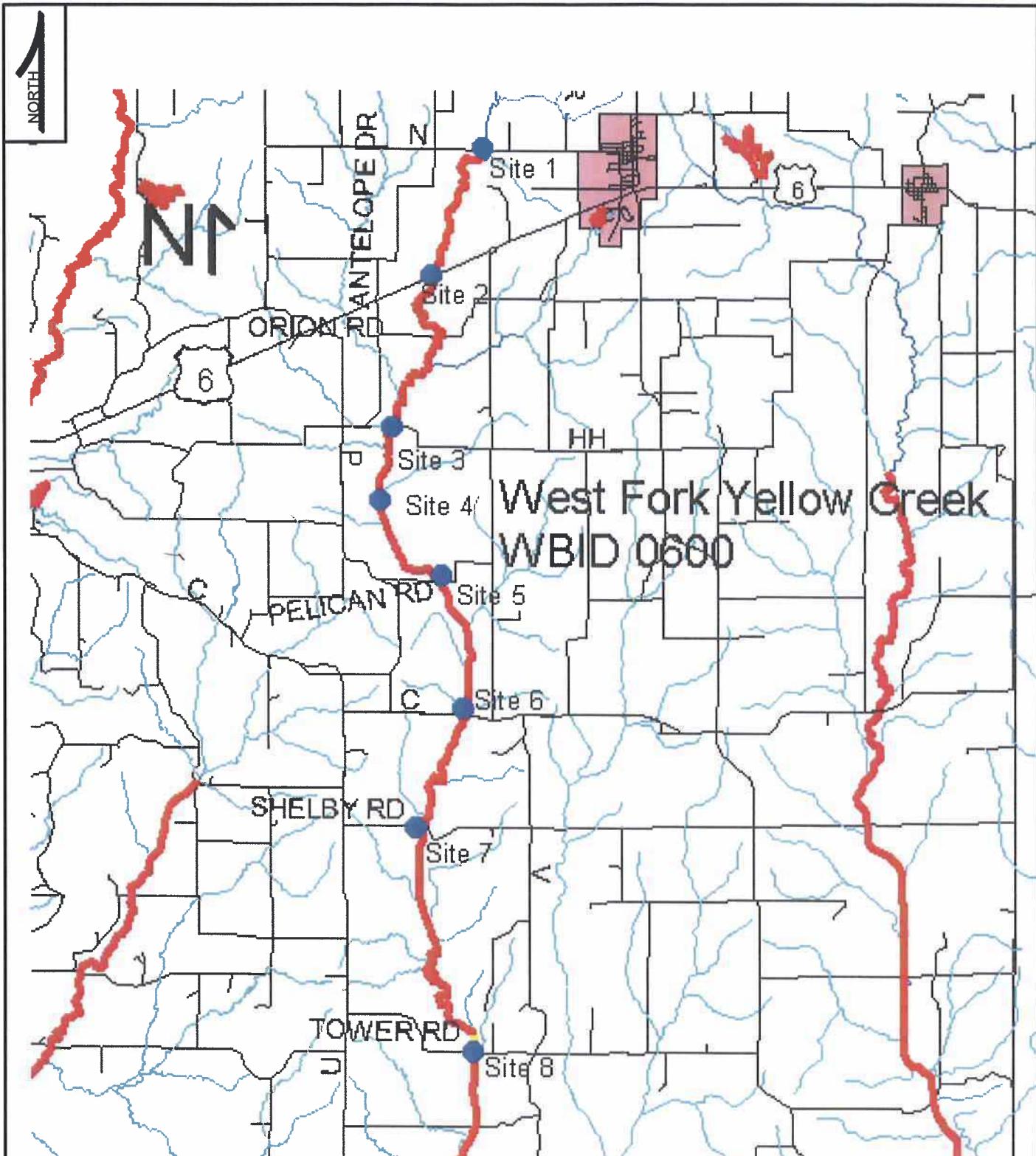
III. UAA Surveyor (please print legibly)

Name of Surveyor: Renee Martin Telephone Number: 573-875-7844

Organization/Employer: Applied Environmental Solutions

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Signed: _____ **Date:** _____



PICKETT RAY & SILVER

Civil Engineers Land Surveyors Natural Resources
Address: 333 Mid Rivers Mall Drive Phone: (636)397-1211
St. Peters, Missouri 63376 Fax: (636)397-1104
Website: www.prs3.com

© Copyright 2007 by Pickett Ray & Silver, Inc.
CONFIDENTIAL PROPRIETARY MATERIAL The use, reproduction and sales
rights of this drawing are reserved by Pickett, Ray & Silver Inc.

WBID #: 0600
Name: West Fork Yellow Creek
County: Sullivan
GIS Location Map
Sheet 1 of 1

Map provided by AES.
Please refer to USGS for exact site location indicators.

PRS Job Number: 07031.MODN.01E
Drawn By: BLS Date: 10-12-07
Checked By: JCV Date: 10-12-07



PICKETT RAY & SILVER

Civil Engineers Land Surveyors Natural Resources
 Address: 333 Mid Rivers Mall Drive Phone: (636)397-1211
 St. Peters, Missouri 63376 Fax: (636)397-1104
 Website: www.prs3.com

© Copyright 2007 by Pickett Ray & Silver, Inc.
 CONFIDENTIAL PROPRIETARY MATERIAL The use, reproduction and sales
 rights of this drawing are reserved by Pickett, Ray & Silver Inc.

WBID #: 0600
 Name: West Fork Yellow Creek
 County: Sullivan
 USGS Location Map
 Sheet 1 of 5

0 1000 2000 4000
GRAPHIC SCALE
 1 inch = 2000ft.

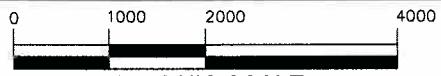
PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-12-07
 Checked By: JCV Date: 10-12-07

PICKETT RAY & SILVER

Civil Engineers Land Surveyors Natural Resources
Address: 333 Mid Rivers Mall Drive St. Peters, Missouri 63376 Phone: (636)397-1211
Fax: (636)397-1104 Website:www.prs3.com

© Copyright 2006 by Pickett Ray & Silver, Inc.
CONFIDENTIAL PROPRIETARY MATERIAL The use, reproduction and sales
rights of this drawing are reserved by Pickett, Ray & Silver Inc.

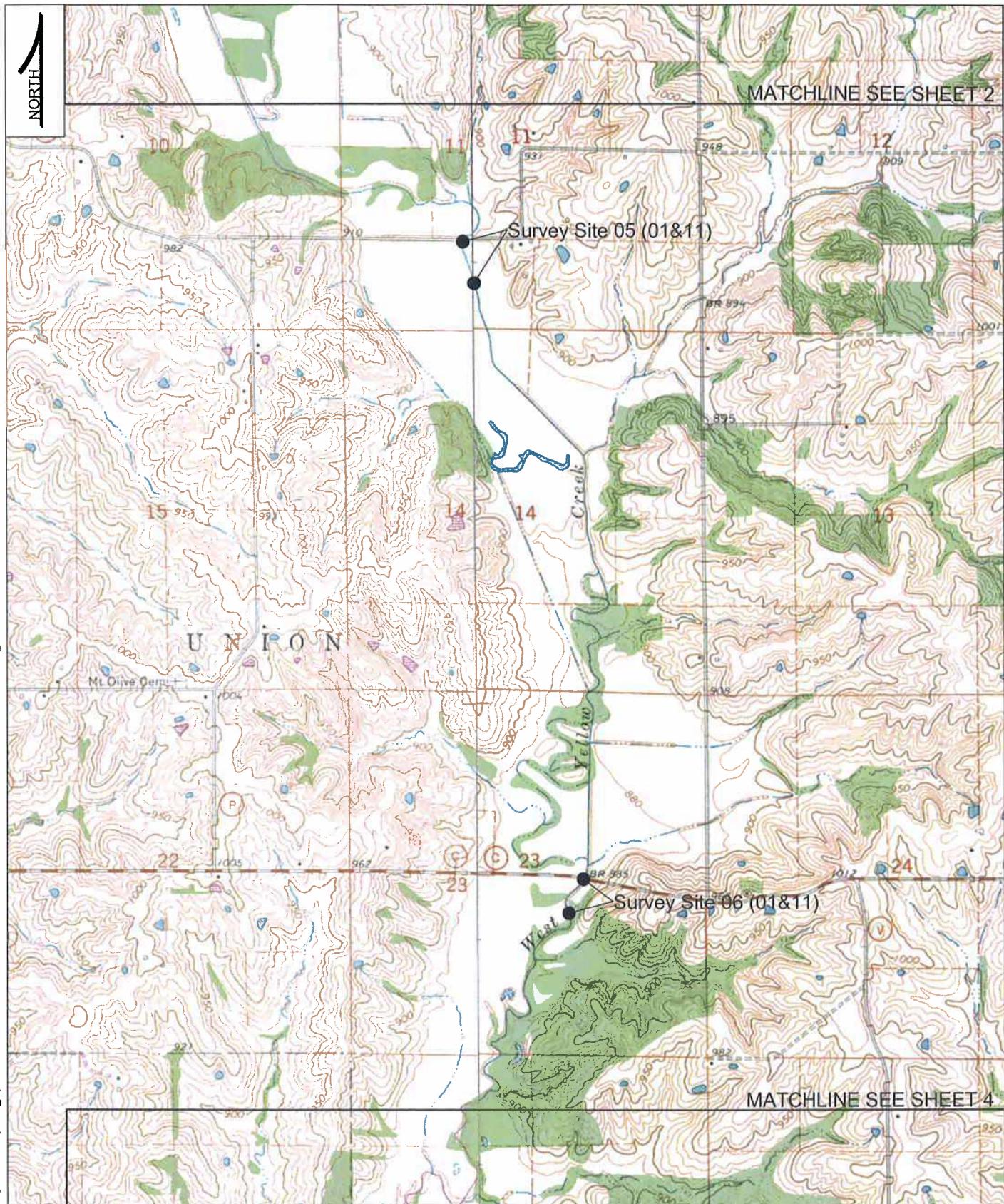
WBID #: 0600
Name: West Fork Yellow
Creek
County: Sullivan
USGS Location Map
Sheet 2 of 5



GRAPHIC SCALE
1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E
Drawn By: BLS Date: 10-12-07
Checked By: JCV Date: 10-12-07

\3serverpr\Projects\07031\dwg\07031 MDRN 01 EV0600 West Fork Yellow Creek.dwg, 10/15/2007 1:27:17 PM, BLSTOESZ

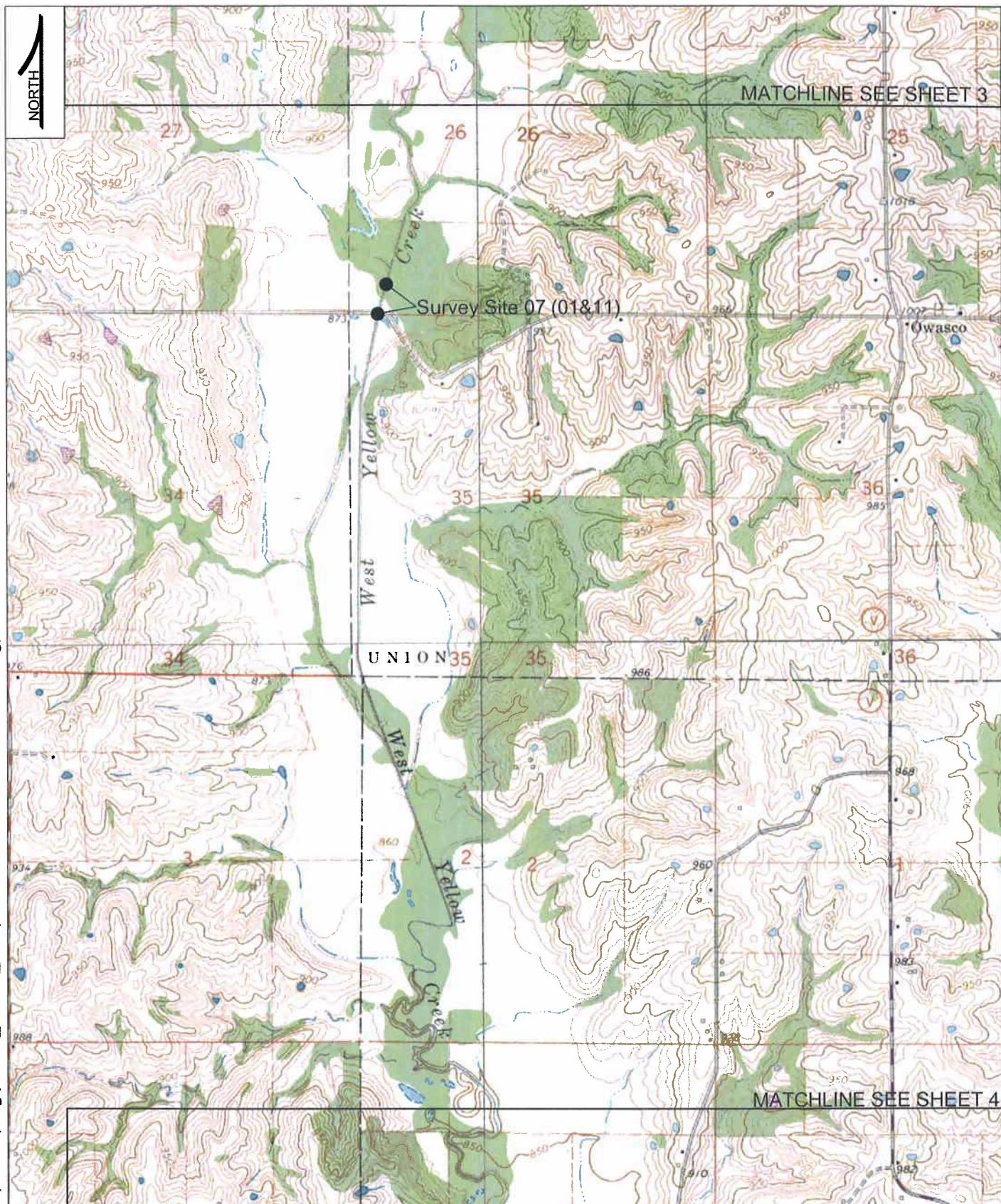


PICKETT RAY & SILVER

Civil Engineers Land Surveyors Natural Resources
Address: 333 Mid Rivers Mall Drive St. Peters, Missouri 63376 Phone: (636)397-1211 Fax: (636)397-1104 Website:www.prs3.com

WBID #: 0600
Name: West Fork Yellow
Creek
County: Sullivan
USGS Location Map
Sheet 3 of 5

PRS Job Number: 07031.MODN.01E
Drawn By: BLS Date: 10-12-07
Checked By: JCV Date: 10-12-07



PICKETT RAY & SILVER

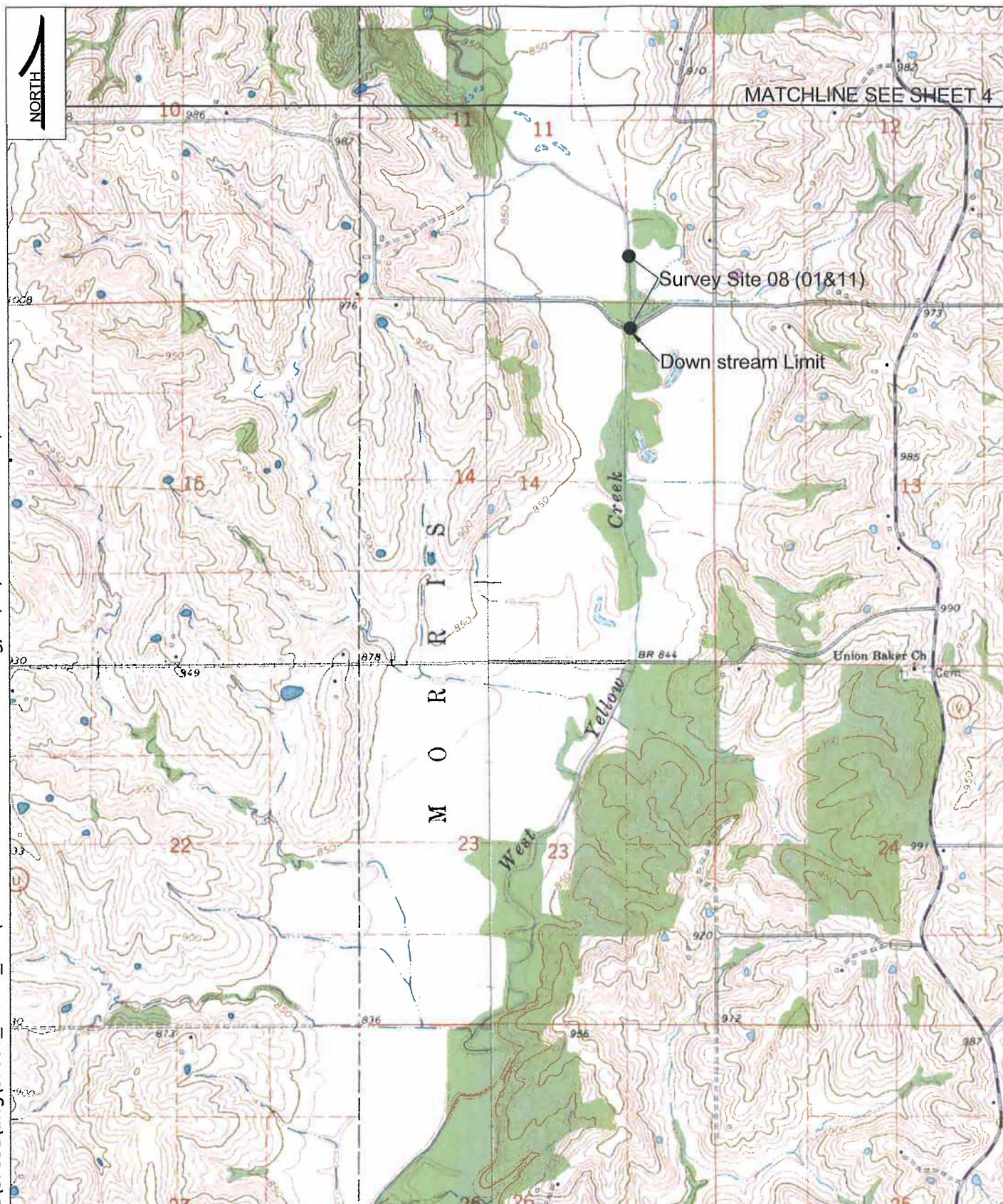
Civil Engineers Land Surveyors Natural Resources
 Address: 333 Mid Rivers Mall Drive Phone: (636)397-1211
 St. Peters, Missouri 63376 Fax: (636)397-1104
 Website: www.prs3.com

© Copyright 2006 by Pickett Ray & Silver, Inc.
 CONFIDENTIAL PROPRIETARY MATERIAL The use, reproduction and sales
 rights of this drawing are reserved by Pickett, Ray & Silver Inc.

WBID #: 0600
 Name: West Fork Yellow Creek
 County: Sullivan
 USGS Location Map
 Sheet 4 of 5

0 1000 2000 4000
GRAPHIC SCALE
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-12-07
 Checked By: JCV Date: 10-12-07



PICKETT RAY & SILVER

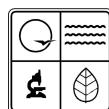
Civil Engineers Land Surveyors Natural Resources
 Address: 333 Mid Rivers Mall Drive Phone: (636)397-1211
 St. Peters, Missouri 63376 Fax: (636)397-1104
 Website: www.prs3.com

© Copyright 2006 by Pickett Ray & Silver, Inc.
 CONFIDENTIAL PROPRIETARY MATERIAL The use, reproduction and sales
 rights of this drawing are reserved by Pickett, Ray & Silver Inc.

WBID #: 0600
 Name: West Fork Yellow Creek
 County: Sullivan
 USGS Location Map
 Sheet 5 of 5

0 1000 2000 4000
GRAPHIC SCALE
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-12-07
 Checked By: JCV Date: 10-12-07



Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/19/07 15:25	Site Location Description (e.g., road crossing): Hwy N Bridge
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0500871	Northing (UTM Y): 4457577	Horizontal Accuracy: (EPE / FOM / PDOP)	19 feet	
Site 11	Easting (UTM X): 0500784	Northing (UTM Y): 4457425	Horizontal Accuracy: (EPE / FOM / PDOP)	23 feet	

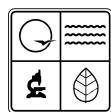
Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_169	Downstream, livestock watering	101_170	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

Evidence of Human Use*: (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Livestock Watering
Comments / Other: Heavy livestock influence in creek				

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	10% Sand	% Silt	90% Mud/Clay	% Bedrock

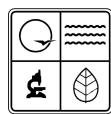
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

none

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: animal waste
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge ¹	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Rained last night
 1 Sludge= thick, mucky mud

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Date of Survey: 9-15-07

Organization: AE Solutions Position: Env. Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 Waterbody ID: 1600	Missouri Department of Natural Resources	Site #: <u>1</u>	Dissolved Oxygen
			Date: <u>9/19/2007</u> Time: <u>15:25</u>
			Dissolved Oxygen: <u>4.32</u> (mg/L)
			Dissolved Oxygen: <u>40.1</u> (% sat)
			Specific Cond: <u>310.5</u> (µS/cm)
			Water Temperature: <u>20.2</u> (°C)
Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water)			
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)			
01 UTM X: <u>0500871</u>		UTM Y: <u>4457577</u>	<u>+/- 19</u> (feet)
11 UTM X: <u>0500784</u>		UTM Y: <u>4457425</u>	<u>+/- 23</u> (feet)
Average Stream Width: <u>3.0</u> (meters)		Length of Survey Segment: <u>150</u> (meters) (20x average stream width)	
Field Staff: <u>Jennifer Hrabik and Justyn Foth</u>			

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	0.68	0.54	0.78	0.20	0.28	0.10	0.26	0.10	0.27	0.10	0.25	0.11	0.50	0.10	0.08	0.08	0.22	0.06	0.12	0.03	0.26	0.05
	2	1.36	0.70	1.56	0.25	0.56	0.12	0.52	0.13	0.54	0.25	0.50	0.15	1.00	0.22	0.16	0.08	0.44	0.09	0.24	0.03	0.52	0.04
	3	2.04	0.73	2.34	0.29	0.84	0.11	0.78	0.11	0.81	0.20	0.75	0.13	1.50	0.25	0.24	0.06	0.66	0.13	0.36	0.02	0.78	0.05
	4	2.72	0.65	3.12	0.34	1.12	0.10	1.04	0.10	1.08	0.23	1.00	0.15	2.00	0.24	0.32	0.09	0.88	0.12	0.48	0.05	1.04	0.04
	5	3.40	0.58	3.90	0.41	1.40	0.13	1.30	0.12	1.35	0.24	1.25	0.10	2.50	0.30	0.40	0.05	1.10	0.13	0.60	0.04	1.30	0.05
	6	4.08	0.52	4.68	0.34	1.68	0.13	1.56	0.14	1.62	0.25	1.50	0.08	3.00	0.26	0.48	0.04	1.32	0.11	0.72	0.05	1.56	0.03
	7	4.76	0.38	5.46	0.30	1.96	0.11	1.82	0.11	1.89	0.25	1.75	0.04	3.50	0.20	0.56	0.04	1.54	0.08	0.84	0.08	1.82	0.03
	8	5.44	0.26	6.24	0.35	2.24	0.10	2.08	0.10	2.16	0.30	2.00	0.01	4.00	0.15	0.64	0.03	1.76	0.06	0.96	0.01	2.08	0.02
	9	6.12	0.18	7.02	0.33	2.52	0.14	2.34	0.10	2.43	0.10	2.25	0.01	4.50	0.08	0.72	0.02	1.98	0.03	1.08	0.02	2.34	0.02
Right Bank	6.80	0.00	7.80	0.00	2.80	0.00	2.60	0.00	2.75	0.00	2.50	0.00	5.00	0.00	0.80	0.00	2.25	0.00	1.20	0.00	2.60	0.00	
	Feature Type (riffle, run, or pool)		Pool	Pool	Run	Run	Run																

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

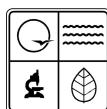
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 8:30	Site Location Description (e.g., road crossing): Hwy 6 Bridge
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 4454883	Northing (UTM Y): 0499799	Horizontal Accuracy: (EPE / FOM / PDOP)	19 feet	
Site 11	Easting (UTM X): 4454730	Northing (UTM Y): 0499754	Horizontal Accuracy: (EPE / FOM / PDOP)	19 feet	

Photos:

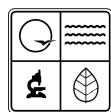
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_171	upstream	101_172	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*:

 (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

Evidence of Human Use*: (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	20% Sand	% Silt	80% Mud/Clay	% Bedrock

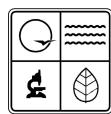
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

algae

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge ¹	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of
Natural Resources

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

1 Sludge= thick, mucky mud

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env. Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Estimated Channel Incision: <u>1.5</u> (m) (height between low bank width and water)</p>	<p>Site #: <u>2</u></p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 33.33%;">01 UTM X: <u>0499799</u></td> <td style="width: 33.33%;">UTM Y: <u>4454883</u></td> <td style="width: 33.33%;">+/- <u>19</u> (feet)</td> </tr> <tr> <td>11 UTM X: <u>0499754</u></td> <td>UTM Y: <u>4454730</u></td> <td>+/- <u>19</u> (feet)</td> </tr> </table> <p>Average Stream Width: <u>6.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)</p> <p>Field Staff: <u>Jennifer Hrabik and Justyn Foth</u></p>	01 UTM X: <u>0499799</u>	UTM Y: <u>4454883</u>	+/- <u>19</u> (feet)	11 UTM X: <u>0499754</u>	UTM Y: <u>4454730</u>	+/- <u>19</u> (feet)	<p>Dissolved Oxygen</p> <table border="0" style="width: 100%;"> <tr> <td>Date: <u>9/20/2007</u></td> <td>Time: <u>8:30</u></td> </tr> <tr> <td>Dissolved Oxygen: <u>4.72</u> (mg/L)</td> <td></td> </tr> <tr> <td>Dissolved Oxygen: <u>50.3</u> (% sat)</td> <td></td> </tr> <tr> <td>Specific Cond: <u>271.7</u> (µS/cm)</td> <td></td> </tr> <tr> <td>Water Temperature: <u>19.0</u> (°C)</td> <td></td> </tr> </table>	Date: <u>9/20/2007</u>	Time: <u>8:30</u>	Dissolved Oxygen: <u>4.72</u> (mg/L)		Dissolved Oxygen: <u>50.3</u> (% sat)		Specific Cond: <u>271.7</u> (µS/cm)		Water Temperature: <u>19.0</u> (°C)						
01 UTM X: <u>0499799</u>	UTM Y: <u>4454883</u>	+/- <u>19</u> (feet)																					
11 UTM X: <u>0499754</u>	UTM Y: <u>4454730</u>	+/- <u>19</u> (feet)																					
Date: <u>9/20/2007</u>	Time: <u>8:30</u>																						
Dissolved Oxygen: <u>4.72</u> (mg/L)																							
Dissolved Oxygen: <u>50.3</u> (% sat)																							
Specific Cond: <u>271.7</u> (µS/cm)																							
Water Temperature: <u>19.0</u> (°C)																							
Transect Cross-Section																							
Station	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
Left Bank		0	0	0	0	0	0	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.70	0.18	0.70	0.45	0.63	0.34	0.76	0.64	0.41	0.23	0.68	0.10	0.73	0.13	0.50	0.02	0.53	0.05	0.56	0.10	0.39	0.05
2		1.40	0.25	1.40	0.90	1.26	0.79	1.52	0.81	0.82	0.34	1.36	0.20	1.46	0.20	1.00	0.08	1.06	0.08	1.12	0.14	0.78	0.18
3		2.10	0.30	2.10	0.83	1.89	>1	2.28	0.73	1.23	0.46	2.04	0.26	2.19	0.18	1.50	0.12	1.59	0.10	1.68	0.18	1.17	0.15
4		2.80	0.19	2.80	0.78	2.52	>1	3.04	0.55	1.64	0.54	2.72	0.40	2.92	0.16	2.00	0.14	2.12	0.13	2.24	0.20	1.56	0.17
5		3.50	0.18	3.50	0.70	3.15	0.92	3.80	0.44	2.05	0.61	3.40	0.51	3.65	0.14	2.50	0.19	2.65	0.15	2.80	0.18	1.95	0.14
6		4.20	0.19	4.20	0.48	3.78	0.81	4.56	0.22	2.46	0.53	4.08	0.55	4.38	0.19	3.00	0.16	3.18	0.15	3.36	0.15	2.34	0.13
7		4.90	0.28	4.90	0.36	4.41	0.56	5.32	0.14	2.87	0.39	4.76	0.50	5.11	0.19	3.50	0.22	3.71	0.13	3.92	0.13	2.73	0.09
8		5.60	0.27	5.60	0.30	5.04	0.40	6.08	0.13	3.28	0.24	5.44	0.35	5.84	0.14	4.00	0.17	4.24	0.18	4.48	0.07	3.12	0.05
9		6.30	0.15	6.30	0.21	5.67	0.17	6.84	0.08	3.69	0.18	6.12	0.22	6.57	0.09	4.50	0.13	4.77	0.17	5.04	0.06	3.51	0.02
Right Bank		7.00	0.00	7.00	0.00	6.30	0.00	7.60	0.00	4.10	0.00	6.85	0.00	7.30	0.00	5.00	0.00	5.30	0.00	5.60	0.00	3.90	0.00
Feature Type		(riffle, run, or pool)		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

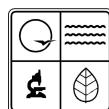
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 9:40	Site Location Description (e.g., road crossing): Owen Rd.
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0498741	Northing (UTM Y): 4451591	Horizontal Accuracy: (EPE / FOM / PDOP)	17 feet	
Site 11	Easting (UTM X): 0498799	Northing (UTM Y): 4451432	Horizontal Accuracy: (EPE / FOM / PDOP)	24 feet	

Photos:

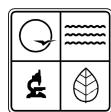
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_174	upstream	101_175	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*:

 (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

Evidence of Human Use*: (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:
none

Substrate*: (These values should add up to 100%.)

1% Cobble	9% Gravel	45% Sand	% Silt	45% Mud/Clay	% Bedrock
-----------	-----------	----------	--------	--------------	-----------

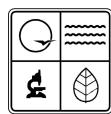
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae
Arrowhead

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge ¹	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Landowner stopped by and commented that people dump a lot of trash into stream here, and he feels it is a big problem that needs to be taken care of.

1 Sludge= thick, mucky mud

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env Specialist

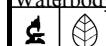
Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results



Missouri
Department of
Natural Resources

Waterbody Inventory



Estimated Channel Incision:

Site #: 3

2.0 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: <u>0498741</u>	UTM Y: <u>4451591</u>	<u>+/-</u> <u>17</u> (feet)
11 UTM X: <u>0498799</u>	UTM Y: <u>4451432</u>	<u>+/-</u> <u>24</u> (feet)

Average Stream Width: 5.0 (meters) Length of Survey Segment: 150 (meters)
(To determine Length of Reach)

Field Staff: Jennifer Hrabik and Justyn Foth

Dissolved Oxygen

Date: 9/20/2007 Time: 9:40

Dissolved Oxygen: 5.67 (mg/L)

Dissolved Oxygen: 64.7 (% sat)

Specific Cond: 345.2 (µS/cm)

Water Temperature: 20.9 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1.16	0.01	0.27	0.04	0.40	0.04	0.43	0.19	0.60	0.01	0.40	0.09	0.73	0.24	0.50	0.04	0.59	0.11	0.94	0.10	0.63	0.18
	2.32	0.01	0.54	0.08	0.80	0.10	0.86	0.17	1.20	0.01	0.80	0.19	1.46	0.30	1.00	0.08	1.18	0.16	1.88	0.16	1.26	0.30
	3.48	0.06	0.81	0.15	1.20	0.14	1.29	0.18	1.80	0.01	1.20	0.25	2.19	0.29	1.50	0.11	1.77	0.18	2.82	0.23	1.89	0.35
	4.64	0.08	1.08	0.20	1.60	0.18	1.72	0.20	2.40	0.01	1.60	0.36	2.92	0.38	2.00	0.16	2.36	0.15	3.76	0.15	2.52	0.40
	5.80	0.05	1.35	0.31	2.00	0.16	2.15	0.23	3.00	0.01	2.00	0.50	3.65	0.32	2.50	0.25	2.95	0.24	4.70	0.14	3.15	0.39
	6.96	0.06	1.62	0.30	2.40	0.17	2.58	0.22	3.60	0.02	2.40	0.70	4.38	0.34	3.00	0.25	3.54	0.34	5.64	0.27	3.78	0.41
	7.112	0.04	1.89	0.24	2.80	0.20	3.01	0.20	4.20	0.02	2.80	0.75	5.11	0.45	3.50	0.31	4.13	0.37	6.58	0.30	4.41	0.38
	8.128	0.03	2.16	0.11	3.20	0.17	3.44	0.16	4.80	0.02	3.20	0.56	5.84	0.50	4.00	0.17	4.72	0.35	7.52	0.25	5.04	0.29
	9.144	0.01	2.43	0.06	3.60	0.17	3.87	0.11	5.40	0.01	3.60	0.34	6.57	0.46	4.50	0.12	5.31	0.26	8.46	0.23	5.67	0.15
Right Bank	1.65	0.00	2.70	0.00	4.00	0.00	4.30	0.00	0.60	0.00	4.00	0.00	7.30	0.25	5.00	0.00	5.90	0.00	9.40	0.00	6.30	0.00
Feature Type (riffle, run, or pool)	Run		Run		Pool		Pool		Run		Pool											

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

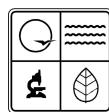
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 10:00	Site Location Description (e.g., road crossing): 150m downstream of site 03
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 4451319	Northing (UTM Y): 0498830	Horizontal Accuracy: (EPE / FOM / PDOP)	23 feet	
Site 11	Easting (UTM X): 4451206	Northing (UTM Y): 0498759	Horizontal Accuracy: (EPE / FOM / PDOP)	19 feet	

Photos:

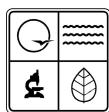
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_176	upstream	101_177	downstream	101_179	Beaver dam-downstream transect 10
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*:

(Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

Evidence of Human Use*: (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

Substrate*: (These values should add up to 100%.)

3% Cobble	2% Gravel	45% Sand	% Silt	30% Mud/Clay	20% Bedrock
-----------	-----------	----------	--------	--------------	-------------

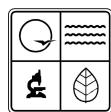
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae
Cattails
Duckweed
rushes

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge ¹	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

1 Sludge= thick, mucky mud

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env. Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results



Missouri
Department of
Natural Resources

Waterbody Inventory

1600

Site #: 4

Estimated Channel Incision: 2.0 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: <u>0498830</u>	UTM Y: <u>4451319</u>	<u>+/-</u> <u>23</u> (feet)
11 UTM X: <u>0498759</u>	UTM Y: <u>4451206</u>	<u>+/-</u> <u>19</u> (feet)

Average Stream Width: 4.0 (meters) Length of Survey Segment: 150 (meters)
(To determine Length of Reach)

Field Staff: Jennifer Hrabik and Justyn Foth

Dissolved Oxygen	
Date: <u>9/20/2007</u>	Time: <u>10:00</u>
Dissolved Oxygen: <u>4.04</u> (mg/L)	
Dissolved Oxygen: <u>47.3</u> (% sat)	
Specific Cond: <u>342.1</u> (µS/cm)	
Water Temperature: <u>20.4</u> (°C)	

Transect Cross-Section																						
Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1.00	0.03	0.28	0.03	0.36	0.01	0.51	0.01	0.49	0.01	0.07	<0.01	0.20	0.05	0.65	0.10	0.43	0.26	0.59	0.19	0.53	0.03
	2.00	0.05	0.56	0.06	0.72	0.01	1.02	0.03	0.98	0.07	0.14	<0.01	0.40	0.06	1.30	0.09	0.86	0.44	1.18	0.34	1.06	0.07
	3.00	0.07	0.84	0.14	1.08	0.02	1.53	0.05	1.47	0.06	0.21	0.01	0.60	0.08	1.95	0.15	1.29	0.65	1.77	0.37	1.59	0.15
	4.00	0.08	1.12	0.15	1.44	0.01	2.04	0.06	1.96	0.11	0.28	0.02	0.80	0.09	2.60	0.34	1.72	0.66	2.36	0.37	2.12	0.26
	5.00	0.08	1.40	0.15	1.80	0.01	2.55	0.05	2.45	0.16	0.35	0.01	1.00	0.13	3.25	0.30	2.15	0.60	2.95	0.22	2.65	0.34
	6.00	0.07	1.68	0.14	2.16	0.01	3.06	0.04	2.94	0.20	0.42	0.01	1.20	0.17	3.90	0.25	2.58	0.45	3.54	0.14	3.18	0.50
	7.00	0.06	1.96	0.16	2.52	0.02	3.57	0.04	3.43	0.19	0.49	<0.01	1.40	0.19	4.55	0.22	3.01	0.38	4.13	0.12	3.71	0.54
	8.00	0.05	2.24	0.17	2.88	0.03	4.08	0.03	3.92	0.14	0.56	0.01	1.60	0.07	5.20	0.26	3.44	0.36	4.72	0.11	4.24	0.41
	9.00	0.04	2.52	0.11	3.24	0.02	4.59	0.05	4.41	0.08	0.63	<0.01	1.80	0.04	5.85	0.28	3.87	0.18	5.31	0.09	4.77	0.17
Right Bank	2.50	0.00	2.80	0.00	3.60	0.00	5.10	0.00	4.95	0.00	0.75	0.00	2.00	0.00	6.50	0.00	4.35	0.00	5.95	0.00	5.30	0.00
	Feature Type (riffle, run, or pool)		Pool	Pool	Run	Run	Run	Run	Riffle	Run	Run	Run	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool		

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

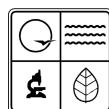
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 10:45	Site Location Description (e.g., road crossing): Pelican Rd.
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0499943	Northing (UTM Y): 4448313	Horizontal Accuracy: (EPE / FOM / PDOP)	17 feet
Site 11	Easting (UTM X): 0499990	Northing (UTM Y): 4448102	Horizontal Accuracy: (EPE / FOM / PDOP)	20 feet

Photos:

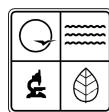
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_181	upstream	101_180	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*:

 (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

Evidence of Human Use*: (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:
none

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	70% Sand	% Silt	30% Mud/Clay	% Bedrock

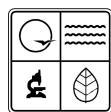
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

none

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge ¹	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

1 Sludge= thick, mucky mud

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Date of Survey: 9-20-07

Organization: AE Solutions

Position: Env. Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results



Missouri
Department of
Natural Resources

Waterbody
Inventory



Waterbody
Inventory

1600

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

223

224

226

227

228

229

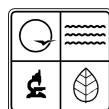
231

233

235

237

239



Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 11:45	Site Location Description (e.g., road crossing): Hwy. C Bridge
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0500466	Northing (UTM Y): 4445478	Horizontal Accuracy: (EPE / FOM / PDOP)	20 feet	
Site 11	Easting (UTM X): 0500386	Northing (UTM Y): 4445320	Horizontal Accuracy: (EPE / FOM / PDOP)	21 feet	

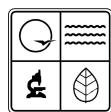
Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_182	Upstream-fence-livestock watering	101_183	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

Evidence of Human Use*: (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Livestock Watering
Comments / Other:				

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	60% Sand	% Silt	40% Mud/Clay	% Bedrock

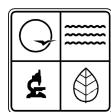
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae
Duckweed

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge ¹	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of
Natural Resources

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

1 Sludge= thick, mucky mud

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env. Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results



Missouri
Department of
Natural Resources

Waterbody

Inventory

1600

Site #: 6

Estimated Channel Incision: 2.0 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: <u>0500466</u>	UTM Y: <u>4445478</u>	<u>+-</u> <u>20</u> (feet)
11 UTM X: <u>0500386</u>	UTM Y: <u>4445320</u>	<u>+-</u> <u>21</u> (feet)

Average Stream Width: 4.0 (meters) Length of Survey Segment: 150 (meters)
(To determine Length of Reach)

Field Staff: Jennifer Hrabik and Justyn Foth

Dissolved Oxygen

Date: 9/20/2007 Time: 11:45

Dissolved Oxygen: 5.45 (mg/L)

Dissolved Oxygen: 61.4 (% sat)

Specific Cond: 349.3 (µS/cm)

Water Temperature: 21.2 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.59	0.10	0.13	0.02	0.08	0.01	0.38	0.15	0.09	0.01	0.78	0.17	0.32	0.17	1.02	0.20	0.80	0.12	0.13	0.06	0.03
	2	1.18	0.20	0.26	0.01	0.16	0.02	0.76	0.25	0.18	0.01	1.56	0.35	0.64	0.28	2.04	0.57	1.60	0.17	0.26	0.04	0.06
	3	1.77	0.05	0.39	0.02	0.24	0.01	1.14	0.26	0.27	0.02	2.34	0.46	0.96	0.32	3.06	0.70	2.40	0.25	0.39	0.05	0.09
	4	2.36	0.03	0.52	0.06	0.32	0.01	1.52	0.25	0.36	0.02	3.12	0.40	1.28	0.39	4.08	0.80	3.20	0.27	0.52	0.09	0.12
	5	2.95	0.30	0.65	0.10	0.40	0.02	1.90	0.25	0.45	0.04	3.90	0.27	1.60	0.44	5.10	>1	4.00	0.45	0.65	0.07	0.15
	6	3.54	0.48	0.78	0.11	0.48	0.02	2.28	0.22	0.54	0.04	4.68	0.20	1.92	0.42	6.12	>1	4.80	0.59	0.78	0.06	0.18
	7	4.13	0.61	0.91	0.09	0.56	0.03	2.66	0.11	0.63	0.03	5.46	0.18	2.24	0.37	7.14	>1	5.60	0.63	0.91	0.03	0.21
	8	4.72	0.45	1.04	0.06	0.64	0.03	3.04	0.06	0.72	0.02	6.24	0.30	2.56	0.26	8.16	>1	6.40	0.60	1.04	0.02	0.24
	9	5.31	0.15	1.17	0.04	0.72	0.01	3.42	0.05	0.81	0.01	7.02	0.34	2.88	0.14	9.18	0.60	7.20	0.43	1.17	0.01	0.27
Right Bank	5.90	0.00	1.30	0.00	0.80	0.00	3.85	0.00	0.90	0.00	7.80	0.00	3.20	0.00	10.20	0.00	8.00	0.00	1.30	0.00	0.38	0.00
	Feature Type (riffle, run, or pool)		Pool	Run	Run	Pool	Run	Riffle														

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

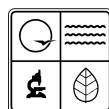
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 12:20	Site Location Description (e.g., road crossing): Shelby Rd.
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0499574	Northing (UTM Y): 4443257	Horizontal Accuracy: (EPE / FOM / PDOP)	21 feet	
Site 11	Easting (UTM X): 0499534	Northing (UTM Y): 4443093	Horizontal Accuracy: (EPE / FOM / PDOP)	14 feet	

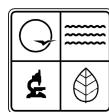
Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_184	Upstream	101_185	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: 				

Evidence of Human Use*: (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	80% Sand	% Silt	20% Mud/Clay	% Bedrock

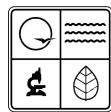
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of
Natural Resources

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results



Missouri Department of Natural Resources

Site #: 7

Estimated Channel incision: 2.5 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 0499574 UTM Y: 4443257 +/- 21 (feet)
11 UTM X: 0499534 UTM Y: 4443093 +/- 14 (feet)

Average Stream Width: 2.0 (meters) Length of Survey Segment: 150 (meters)
(To determine Length of Reach)

Field Staff: Jennifer Hrabik and Justyn Foth

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	0.27	0.02	0.09	0.02	0.07	0.01	0.07	0.01	0.36	0.15	0.25	0.05	0.13	0.04	0.10	0.02	0.09	0.01	0.35	0.11	0.28	0.03
	2	0.54	0.07	0.18	0.05	0.14	0.02	0.14	0.01	0.72	0.30	0.50	0.07	0.26	0.04	0.20	0.03	0.18	0.01	0.70	0.13	0.56	0.04
	3	0.81	0.06	0.27	0.06	0.21	0.03	0.21	0.02	1.08	0.44	0.75	0.08	0.39	0.05	0.30	0.02	0.27	0.02	1.05	0.18	0.84	0.05
	4	1.08	0.05	0.36	0.05	0.28	0.05	0.28	0.01	1.44	0.56	1.00	0.09	0.52	0.04	0.40	0.02	0.36	0.03	1.40	0.17	1.12	0.05
	5	1.35	0.03	0.45	0.04	0.35	0.05	0.35	0.01	1.80	0.67	1.25	0.11	0.65	0.03	0.50	0.02	0.45	0.01	1.75	0.15	1.40	0.05
	6	1.62	0.04	0.54	0.04	0.42	0.06	0.42	0.02	2.16	0.60	1.50	0.12	0.78	0.03	0.60	0.01	0.54	0.02	2.10	0.05	1.68	0.07
	7	1.89	0.05	0.63	0.03	0.49	0.07	0.49	0.01	2.52	0.39	1.75	0.13	0.91	0.02	0.70	0.01	0.63	0.02	2.45	0.02	1.96	0.05
	8	2.16	0.04	0.72	0.01	0.56	0.05	0.56	0.01	2.88	0.20	2.00	0.09	1.04	0.02	0.80	0.01	0.72	0.03	2.80	0.04	2.24	0.04
	9	2.43	0.02	0.81	0.01	0.63	0.02	0.63	0.01	3.24	0.04	2.25	0.05	1.17	0.04	0.90	0.01	0.81	0.02	3.15	0.07	2.52	0.04
Right Bank	2.70	0.00	0.90	0.00	0.70	0.00	0.70	0.00	3.60	0.00	2.50	0.00	1.35	0.00	1.05	0.00	0.90	0.00	3.55	0.00	2.80	0.00	
	Run		Run		Run		Run		Pool		Run		Run		Run		Run		Pool		Pool		

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

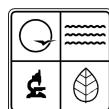
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten).

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as ≥ 1).

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 13:00	Site Location Description (e.g., road crossing): Tower Rd.
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0500642	Northing (UTM Y): 4438337	Horizontal Accuracy: (EPE / FOM / PDOP)	17 feet	
Site 11	Easting (UTM X): 0500645	Northing (UTM Y): 4438147	Horizontal Accuracy: (EPE / FOM / PDOP)	19 feet	

Photos:

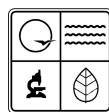
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_186	Upstream	101_187	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*:

 (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources

Data Sheet B – Site Characterization (continued)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: 				

Evidence of Human Use*: (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	80% Sand	% Silt	20% Mud/Clay	% Bedrock

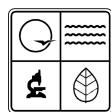
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of
Natural Resources

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env Specialist

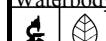
Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results



Missouri
Department of
Natural Resources

Waterbody Inventory



Estimated Channel Incision:

Site #: 8

2.0 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: <u>0500642</u>	UTM Y: <u>4438337</u>	<u>+/-</u> <u>17</u> (feet)
11 UTM X: <u>0500645</u>	UTM Y: <u>4438147</u>	<u>+/-</u> <u>19</u> (feet)

Average Stream Width: 4.5 (meters) Length of Survey Segment: 150 (meters)
(To determine Length of Reach)

Field Staff: Jennifer Hrabik and Justyn Foth

Dissolved Oxygen	
Date: <u>9/20/2007</u>	Time: <u>13:00</u>
Dissolved Oxygen: <u>4.99</u> (mg/L)	
Dissolved Oxygen: <u>58.8</u> (% sat)	
Specific Cond: <u>470.4</u> (µS/cm)	
Water Temperature: <u>24.3</u> (°C)	

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1.00	0.25	0.03	0.27	0.10	0.56	0.50	0.20	0.19	0.36	0.12	0.49	0.08	0.59	0.08	0.62	0.10	0.80	0.08	0.53	0.21	0.52
	2.00	0.50	0.06	0.54	0.10	1.12	0.64	0.40	0.28	0.72	0.11	0.98	0.13	1.18	0.09	1.24	0.13	1.60	0.01	1.06	0.11	1.04
	3.00	0.75	0.05	0.81	0.12	1.68	0.69	0.60	0.25	1.08	0.13	1.47	0.21	1.77	0.15	1.86	0.20	2.40	0.04	1.59	0.13	1.56
	4.00	1.00	0.06	1.08	0.10	2.24	0.45	0.80	0.18	1.44	0.12	1.96	0.33	2.36	0.12	2.48	0.19	3.20	0.10	2.12	0.13	2.08
	5.00	1.25	0.06	1.35	0.08	2.80	0.34	1.00	0.14	1.80	0.11	2.45	0.32	2.95	0.14	3.10	0.18	4.00	0.03	2.65	0.16	2.60
	6.00	1.50	0.07	1.62	0.07	3.36	0.25	1.20	0.11	2.16	0.15	2.94	0.34	3.54	0.13	3.72	0.21	4.80	0.02	3.18	0.21	3.12
	7.00	1.75	0.10	1.89	0.06	3.92	0.16	1.40	0.10	2.52	0.17	3.43	0.37	4.13	0.18	4.34	0.16	5.60	0.08	3.71	0.22	3.64
	8.00	2.00	0.05	2.16	0.03	4.48	0.10	1.60	0.08	2.88	0.25	3.92	0.34	4.72	0.26	4.96	0.20	6.40	0.22	4.24	0.29	4.16
	9.00	2.25	0.01	2.43	0.01	5.04	0.04	1.80	0.05	3.24	0.18	4.41	0.20	5.31	0.18	5.58	0.13	7.20	0.18	4.77	0.21	4.68
Right Bank	10.00	2.50	0.00	2.75	0.00	5.60	0.00	2.00	0.00	3.60	0.00	4.90	0.00	5.95	0.00	6.20	0.00	8.00	0.00	5.30	0.00	5.20
	Feature Type (riffle, run, or pool)	Run	Pool	Pool	Pool																	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

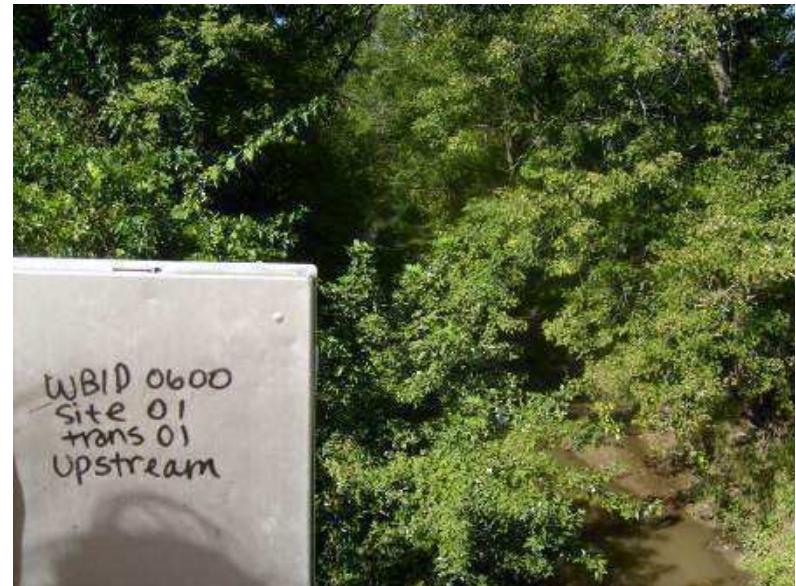
All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____

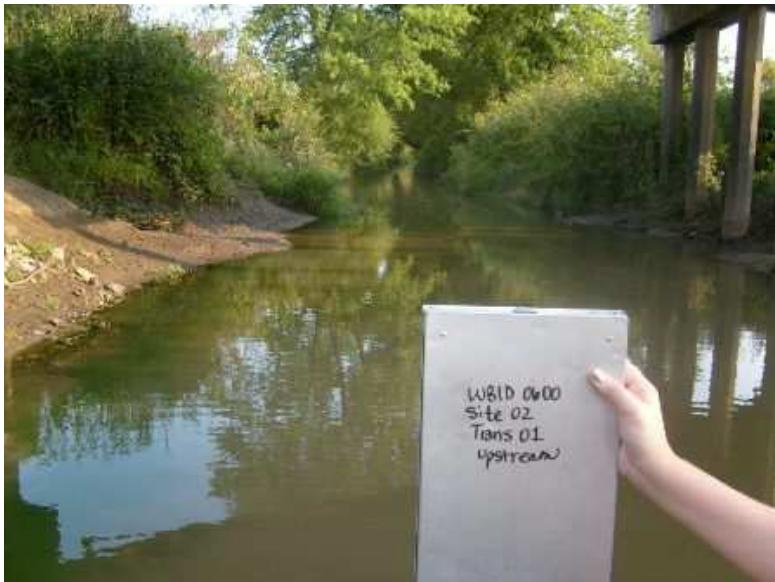
WBID# 0600



Site# 1 Photo ID# 101-169, Downstream / Livestock



Site# 1 Photo ID# 101-170, Upstream



Site# 2 Photo ID# 101-171, Upstream



Site# 2 Photo ID# 101-172, Downstream

WBID# 0600



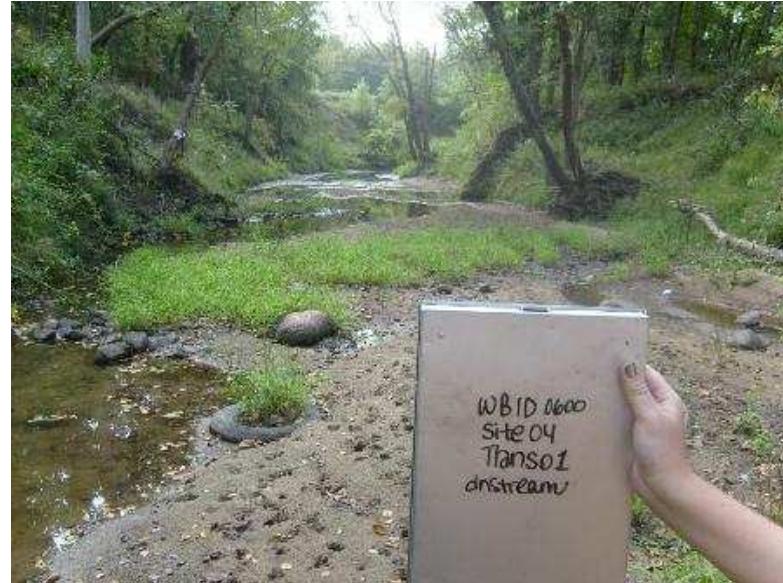
Site# 3 Photo ID# 101-174, Upstream



Site# 3 Photo ID# 101-175, Downstream



Site# 4 Photo ID# 101-176, Upstream

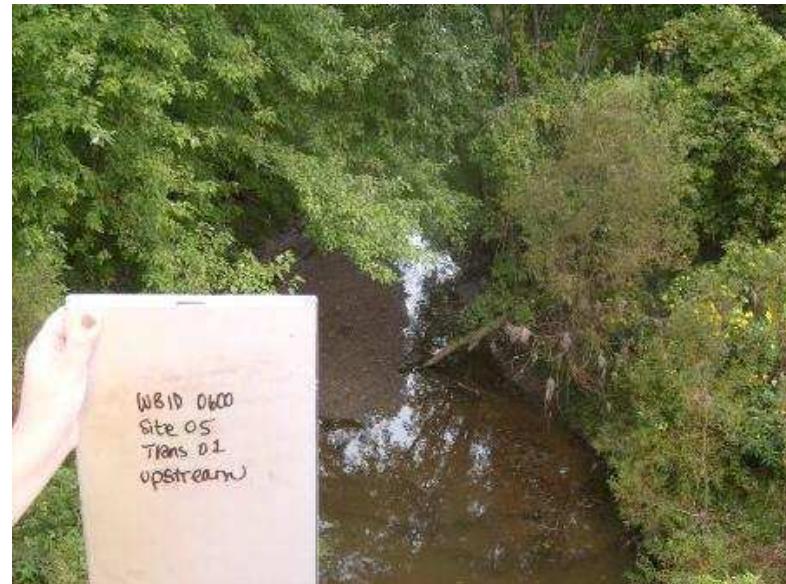


Site# 4 Photo ID# 101-177, Downstream

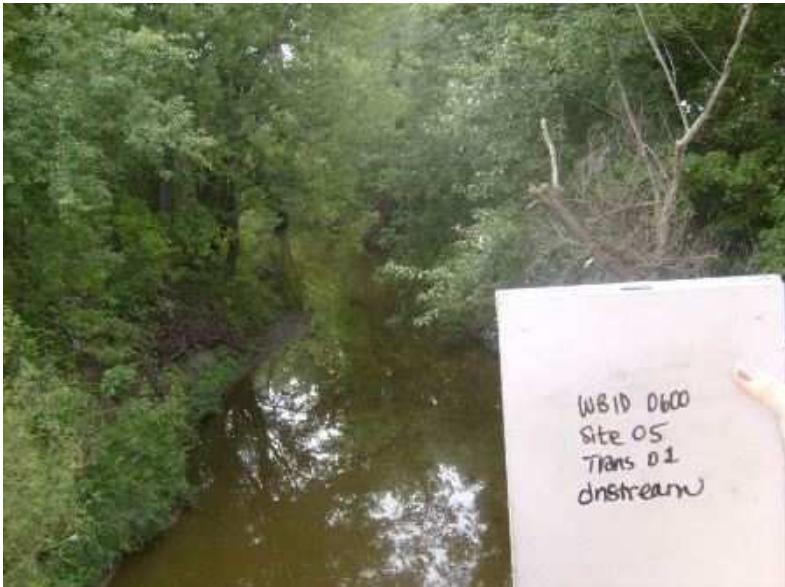
WBID# 0600



Site# 4 Photo ID# 101-179, Beaver dam



Site# 5 Photo ID# 101-181, Upstream



Site# 5 Photo ID# 101-180, Downstream

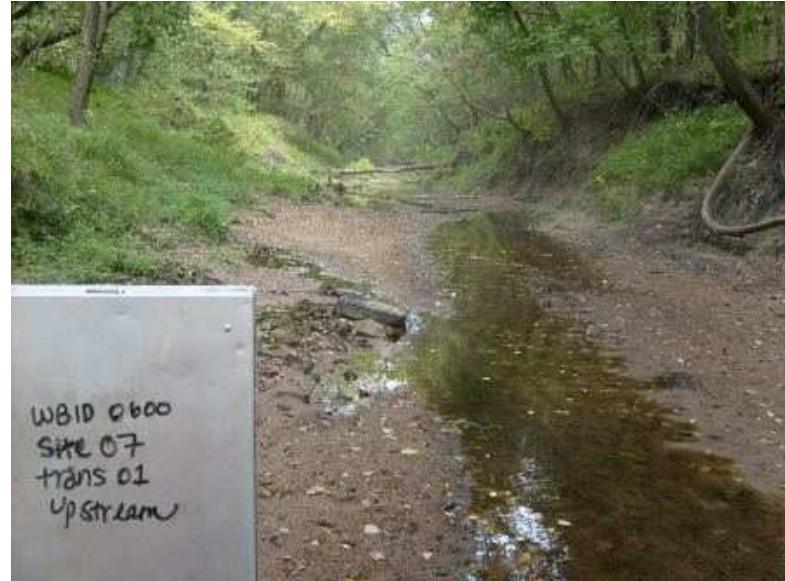


Site# 6 Photo ID# 101-182, Upstream

WBID# 0600



Site# 6 Photo ID# 101-183, Downstream



Site# 7 Photo ID# 101-184, Upstream



Site# 7 Photo ID# 101-185, Downstream



Site# 8 Photo ID# 101-186, Upstream

WBID# 0600



Site# 8 Photo ID# 101-187, Downstream



Missouri
Department of
Natural Resources

Memo

To: file
From: Mike Kruse, MO DNR
Date: April 28, 2008
Re: Wrong Name

The 2007 UAA for WBID # 600 West Yellow Creek was submitted under the incorrect name of West Fork Yellow Creek. However, the correct segment (name and WBID) was surveyed.